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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,083

10/11/2005

Takuma Hojo

SHIGA7.029APC

2712

20995 7590 07/03/2007  
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EXAMINER

HAMILTON, CYNTHIA

ART UNIT

PAPER NUMBER

1752

NOTIFICATION DATE

DELIVERY MODE

07/03/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com  
eOAPilot@kmob.com

**Office Action Summary**

Application No.

10/553,083

Applicant(s)

HOJO ET AL.

Examiner

Cynthia Hamilton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/6/07
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 4-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

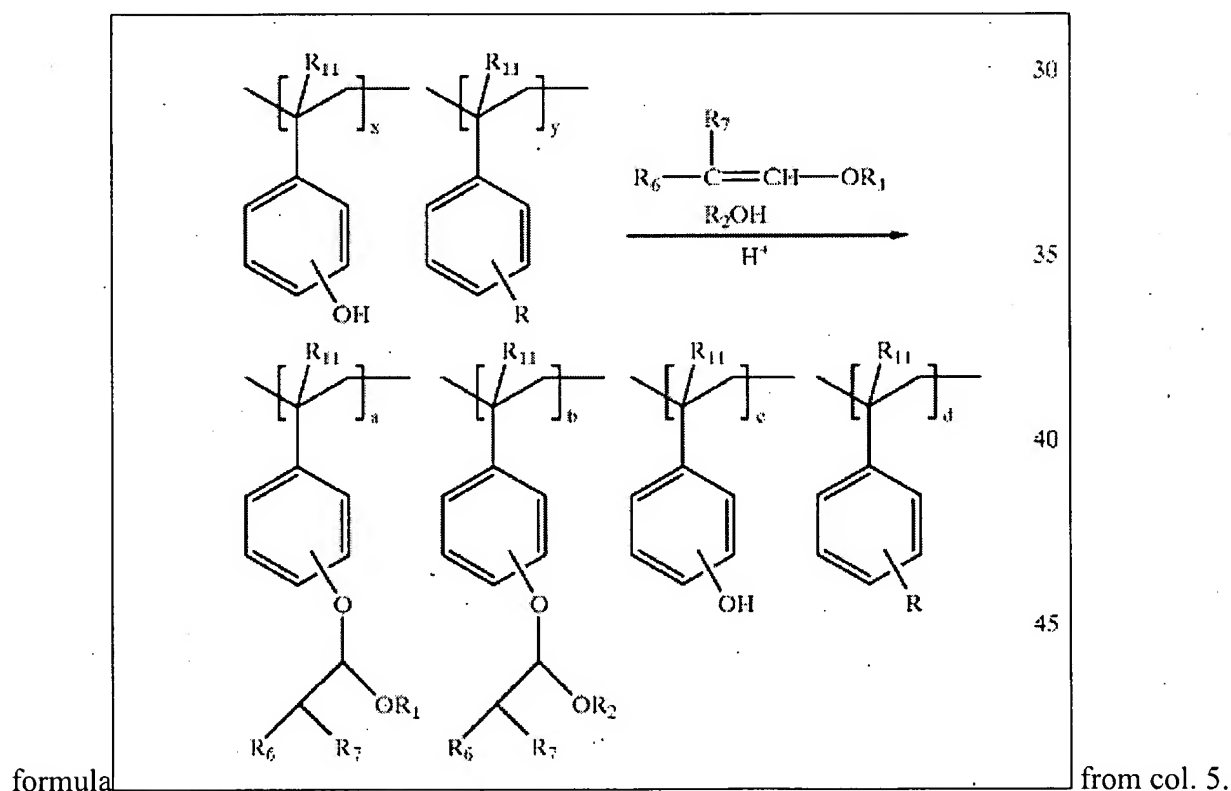
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/6/2007
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1 and 4-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malik et al (6,133,412) in view of Malik et al (SPIE Vol. 3678). With respect to instant claims 1 and 4-11, Malik et al teach the instant compositions with the exception of showing a working example with the specific polymer used in a specific composition. However, Malik et al make polymers as examples which read on the instant polymers used in Examples 12, 13, 17 and 29 and disclose the use of species wherein  $R_2$  of Malik et al is naphthyl, naphthyl ethyl or from nopol which is a polycyclic aliphatic alcohol cited in col. 6, lines 51-65 in the

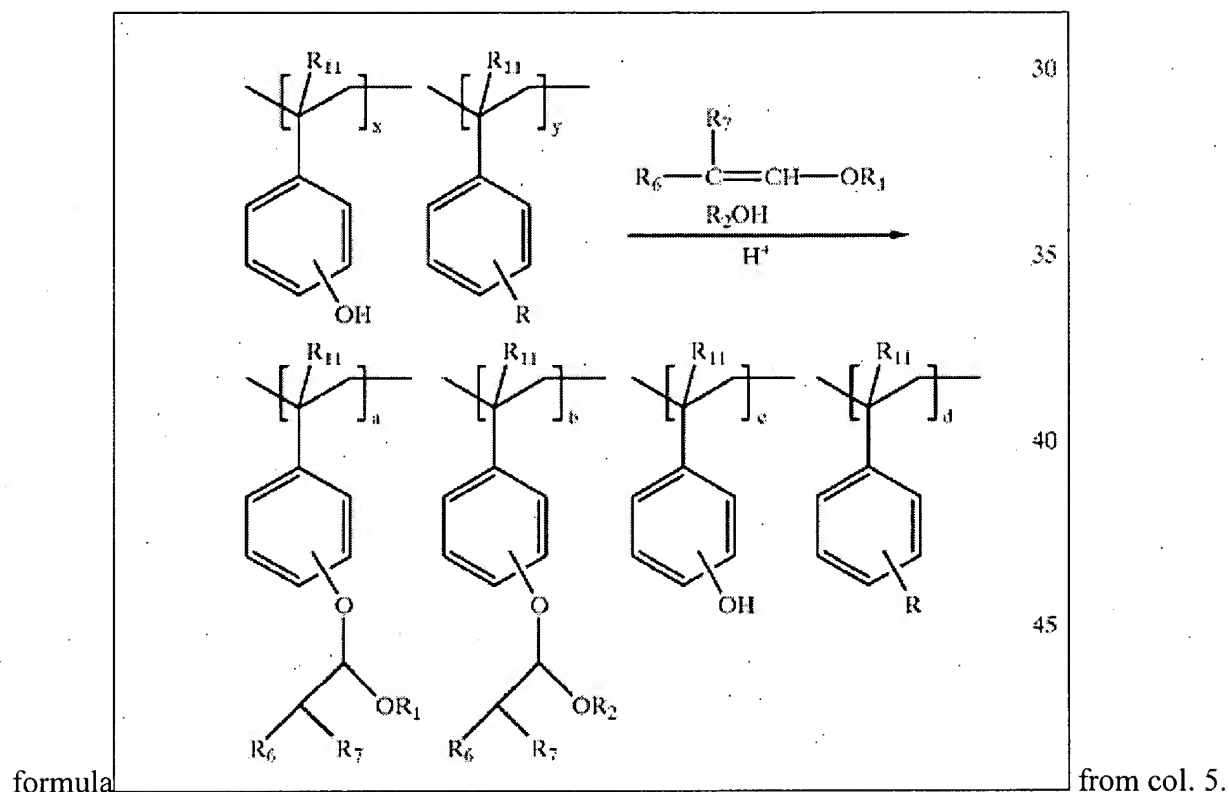


The only polymers made which fit the instant polymer also fit the required instant polydispersity and molecular weight. Mixtures of these polymers are also taught by Malik et al in col. 6-7, The use of amines such as triisopropylamine are taught in col. 15, lines 39-55 and the process of

Art Unit: 1752

imaging compositions with these polymers in col. 16 of Malik et al teach all of the instant invention with respect to these species of polymers for the tailoring of photoresists by mixing acetals. The use of naphthyl or nopyl groups for reducing volatility and contamination of the optics as well as improving etch resistance as taught by Malik et al (SPIE VOL. 3678) to form part of the mixture of Malik et al (6,133,412) would have been prima facie obvious.

2. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malik et al (6,133,412) in view of Malik et al (SPIE Vol. 3678) further in view of . With respect to claim 12, Malik et al teach the instant compositions with the exception of showing a working example with the specific polymer used in a specific composition and the use of adamantane as the polycyclic aliphatic alcohol. However, Malik et al make polymers as examples which are similar to the instant polymers used in Examples 12, 13, 17 and 29 and disclose the use of species wherein  $R_2$  of Malik et al is naphthyl, naphthyl ethyl or from nopol which is a polycyclic aliphatic alcohol cited in col. 6, lines 51-65 in the



The only polymers made which fit the instant polymer also fit the required instant polydispersity and molecular weight. Mixtures of these polymers are also taught by Malik et al in col. 6-7, The use of amines such as triisopropylamine are taught in col. 15, lines 39-55 and the process of imaging compositions with these polymers in col. 16 of Malik et al teach all of the instant invention with respect to these species of polymers for the tailoring of photoresists by mixing acetals. The use of cyclohexyl or other aliphatic groups for reducing volatility and contamination of the optics as well as improving etch resistance as taught by Malik et al (SPIE VOL. 3678) to form part of the mixture of Malik et al (6,133,412) would have been prima facie obvious. As to the use of adamantane, Pasini et al teach that alicyclic unites such as adamantyl groups are etch resistant and form stabile carbonium ions and do not form the isobutene which is known to cause volatile products obtained from tert butyl cleaved groups. The difficulty with the

Art Unit: 1752

loss of isobutene is also addressed in Hien et al on page 440 at the bottom paragraph. Thus, adamantyl groups are prima facie obvious groups to use in the resins of Malik et al to avoid the volatile components in the photoresist when cleaved would have been prima facie obvious as a known polycyclic group with sufficient stability to not produce a volatile compound. In Pasini et al, see particularly the bottom of page 97.

3. Applicant's arguments filed April 6, 2007 have been fully considered but they are not persuasive. Applicants argue that Malik et al in view of Malik et al is not a prima facie obvious rejection. Applicants have stated that these references do not set forth structures which read on the instant invention. The examiner has stated why they do. The rejection stands against this allegation. Applicants argue that they have unexpected results to show unobviousness but present no evidence to support such allegations. The rejection stands for reasons of record.

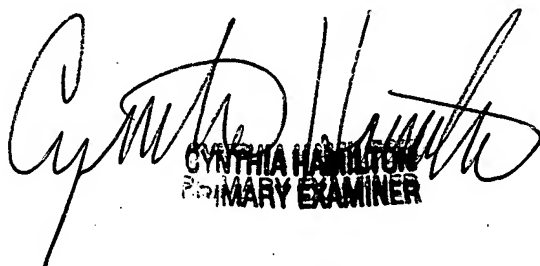
4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Hamilton whose telephone number is 571-272-1331. The examiner can normally be reached on Monday through Friday 9:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571) 272-0729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



CYNTHIA HAMILTON  
PRIMARY EXAMINER

Cynthia Hamilton  
Primary Examiner  
Art Unit 1752

June 25, 2007